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Association of sleep and metabolic syndrome: the Qazvin Metabolic Diseases Study, Iran

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Abstract:

Background: Sleep pattern have been linked to various risk factors for cardiovascular diseases. Sleep quality play an essential role in rhythms of releasing hormones related to energy homeostasis and secretion of catecholamine and cortisol. Therefore, it is logical to consider whether sleep is related to the metabolic syndrome or not. The aim of this study was to determine the association of sleep and metabolic syndrome in Qazvin, Iran. **Methods:** This cross-sectional study was conducted in 1079 people (aged 20–78 years old) selected by multistage cluster random sampling method between September 2010 and April 2011 in Qazvin, Iran. Metabolic syndrome was defined using the criteria proposed by Adult treatment panel III. Sleep was assessed using the Pittsburgh sleep quality index (PSQI). The higher the PSQI score, the worse the sleep quality. A logistic regression analysis was used to examine the association of sleep status and metabolic syndrome.

Results: Mean age was 40.08 ± 10.33 years. Of 1079, 578 (52.2%) were female, and 30.6% of the study population had metabolic syndrome. The total PSQI score was 6.00 ± 2.91 . PSQI score in the subjects with metabolic syndrome was significantly higher than other subjects (6.30 ± 3.20 vs. 5.83 ± 2.76 ; $P=0.013$). Sleep duration, sleep disturbances, and use of sleep medications scores were significantly higher in the subjects with metabolic syndrome compared to the subjects without metabolic syndrome. In logistic regression analysis, sleep disturbances was associated with 1.388 fold increased risk of metabolic syndrome after adjustment for age, gender, and body mass index.

Conclusion: With regards to the results, sleep quality in subjects with metabolic syndrome was poorer than other subjects. Among sleep subscales, only sleep disturbances had independent association with metabolic syndrome.

Keywords:

sleep quality, metabolic syndrome, PSQI score

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